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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,407	02/27/2002	Philippe Lesage	L7307.02110	7381

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STEVENS, DAVIS, MILLER & MOSHER, L.L.P.
1615 L. Street, N.W., Suite 850
Washington, DC 20036

EXAMINER	
MICHALSKI, JUSTIN I	

ART UNIT	PAPER NUMBER
2644	12

DATE MAILED: 04/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/083,407	LESAGE, PHILIPPE	
	Examiner	Art Unit	
	Justin Michalski	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *1/20/2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1 and 6 have been canceled by applicant.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 8, 2-4, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (UK Patent Application GB 2,031,2147 A) in view of Ueda et al. (US Patent 5,751,828).

Regarding Claim 8, Yamamoto discloses a magnetic circuit (Figure 1) for an electrodynamic loudspeaker with a moving coil (voice coil 5), said magnetic circuit having a shape which is axisymmetric about an axis of symmetry and comprising: a dish-shaped yoke with a flat bottom (yoke 1), whose edge, away from said bottom, is provided projecting toward said axis with respect to the side wall of said dish and defining a circular opening which is recessed with respect to said wall (Figure 1 discloses opening near reference 5); a magnet (magnet 2), placed centrally inside said yoke and borne by said flat bottom; and a cylindrical core (core 3), placed centrally inside said yoke and borne by said magnet, the part of said core away from the magnet being opposite said circular opening of the yoke and defining, with the later, an annular gap (Yamamoto discloses a gap Page 1, lines 48-55), in which said moving coil (voice

coil 5) is placed coaxially with the axis of said magnetic circuit thereby being the clearance height available for the coil inside said yoke being greater than the maximum distance that said coil can travel, inside said yoke, toward the bottom thereof, wherein: the diameter of said magnet is greater than that of said core (Figure 1 discloses length of magnet 2 greater than base of core 3), such that said magnet has a peripheral projection which is annular and radial, with respect to said core; and the clearance height for the coil is limited, on the side facing said magnet, by said peripheral projection, such that this clearance height is determined solely by said core (Figure 12 shows base of core 3 greater than gap limiting clearance height). Yamamoto does not disclose the magnet being disk-shaped. However, one or ordinary skill in the art at the time the invention was made would know that disk-shaped magnets are commonly used in magnetic circuits. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a magnetic in the form of a disk. Yamamoto further discloses a magnetic circuit but does not disclose it being made of a sintered neodymium-iron-boron (Nd-Fe-B) ternary alloy. Ueda et al. discloses a magnetic circuit teaching in order to attain a loudspeaker which is small, light-weight, and thin, rare earth metals are used as a magnet in a loud-speaker such as an anisotropic Nd-Fe-B system sintered magnet. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a magnetic made of Nd-Fe-B to obtain a small, light-weight and thin speaker for a high quality audio output.

(Kojima et al. (US patent 6,004,407) is being cited to show sintered neodymium-iron-boron (Nd-Fe-B) magnets are known to have excellent magnetic performance which can be used for a speaker and have performance superior to that of ferrite magnets. It is also shown that Nd-Fe-B is used for attaining a more excellent performance.) (Column 1, lines 5-17)

Regarding Claim 2, Yamamoto further discloses the peripheral radial projection of the magnet with respect to the core (Figure 1) being less than three time the thickness of the magnet which conforms to being at the most equal to three times the thickness of said magnet.

Regarding Claim 3, Yamamoto further discloses (Figure 1) the peripheral radial projection of the magnet with respect to the core is about the thickness of said magnet.

Regarding Claim 4, Yamamoto further discloses (Figure 1) said core (core 3) comprises, in contact with said magnet (magnet 2), a disk-shaped projecting heel (bottom portion of core 3b), the diameter of which is greater than that of the rest of the core, but smaller than that of the magnet; and the clearance height for the coil is limited, on the side facing said magnet, by said projecting heel.

Regarding Claim 7, Yamamoto further discloses an electrodynamic loudspeaker (Figure 1) which comprises a magnetic circuit.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto as modified as applied to claim 8 above, and further in view of Ssutu (US

Patent 6,535,613). Yamamoto discloses a magnetic circuit as stated apropos of claim 8 but does not disclose an axial passage. Ssutu discloses an axial passage (Figure 1) passing through the back plate 24 (i.e. flat bottom of yoke), magnet (magnet 26), and pole piece 30 (i.e. core). Ssutu discloses airflow through the speaker is helpful for cooling the device (Column 1, lines 6-13) avoiding a reduction in acoustic output due to temperature-related voice coil resistance (Column 1, lines 49-56). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an axial passage to allow airflow resulting in a higher quality audio signal.

Response to Arguments

4. Applicant's arguments filed 1/20/2004 have been fully considered but they are not persuasive.

Applicant argues that new claim 8 is not disclosed or suggested by the individual or combined teachings of Yamamoto and Ueda for the reasons that Yamamoto does not teach to consider a magnet other than a ferrite magnet and Ueda teaches away by stating the expensiveness of the magnet material.

Ueda teaches the advantages of using Nd-Fe-B sintered magnetic over other materials by enabling a speaker to be light-weight, small, and thin (Column 1, lines 20-26). Although Ueda discloses that Nd-Fe-B sintered magnets are expensive, Ueda teaches the advantages above and that Nd-Fe-B is widely used in view of performance and **cost** (Column 1, lines 24-26). Therefore, although the use of Nd-Fe-B increases the cost of the speaker, Ueda teaches that it is widely used nevertheless.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (703)305-5598. The examiner can normally be reached on 8 Hours, 5 day/week.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Isen can be reached on (703)305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JIM

XU MEI
PRIMARY EXAMINER